

## WHAT IS CLAIMED:

- 1        1.        A media server apparatus comprising:  
2                a plurality of demultiplexers each operable for demultiplexing a data stream  
3                formatted in accordance with a first predetermined protocol, each demultiplexer outputting  
4                a set of elementary streams each having a format in accordance with a second predetermined  
5                protocol, and wherein a first one of said plurality of demultiplexers is operable for receiving  
6                said data stream from a first source, and a second one of said plurality operable for receiving  
7                said data stream from a second source;  
8                conditional access logic operable for receiving one or more controlled access data  
9                streams in said set of elementary streams, said conditional access logic outputting one or  
10                more descrambled data streams in response to corresponding ones of said controlled access  
11                data streams; and  
12                a multiplexer coupled to said plurality of demultiplexers, said multiplexer operable  
13                for receiving one or more demultiplexed streams from each set of demultiplexed streams and  
14                said one or more descrambled data streams and outputs a multiplexed data stream having a  
15                format in accordance with a third predetermined protocol.
- 1        2.        The apparatus of claim 1 wherein said first and second predetermined protocols are  
2                the same.
- 1        3.        The apparatus of claim 1 wherein said first predetermined protocol corresponds to  
2                an MPEG-2 specification.

1 4. The apparatus of claim 1 further comprising a first switch coupled to said plurality  
2 of multiplexers, and said conditional access logic, said first switch operable for switching a  
3 selected one of said one or more controlled access streams between a corresponding one of  
4 said plurality of demultiplexers and said controlled access logic.

1 5. The apparatus of claim 1 further comprising a central processing unit (CPU) coupled  
2 to said plurality of demultiplexers and said multiplexer, said CPU receiving a set of control  
3 data from said plurality of demultiplexers and outputting a first control signal, operable for  
4 addressing said multiplexed data stream in accordance with said predetermined link layer  
5 protocol, to said multiplexer, said first control signal being output in response to said set of  
6 control data.

1 6. The apparatus of claim 1 wherein said predetermined link-layer protocol comprises  
2 a link-layer protocol in accordance with a FireWire™ bus specification.

1 7. The apparatus of claim 1 wherein said predetermined link-layer protocol comprises  
2 a link-layer protocol in accordance with a Fast Ethernet bus specification.

1 8. The apparatus of claim 5 further comprising an interface unit coupling said CPU is  
2 coupled and said plurality of multiplexers, said interface unit being operable for  
3 communicating said control information between said CPU and said plurality of  
4 multiplexers.

1 9. The apparatus of claim 8 wherein said interface unit is operable for receiving a data  
2 stream from a third source, said data stream from said third source having a format in  
3 accordance with a fourth predetermined protocol, said interface unit outputting said data  
4 stream from said third source to a selected one of said plurality of multiplexers in response  
5 to a second control signal from said CPU.

1 10. The apparatus of claim 1 further comprising a network encoder operable for receiving  
2 said multiplexed data stream and outputting an output data stream encapsulated in  
3 accordance with a predetermined data-link-layer protocol.

1 11. A media server system comprising:

2 a plurality of demultiplexers each operable for demultiplexing a data stream  
3 formatted in accordance with a first predetermined protocol, each demultiplexer outputting  
4 a set of demultiplexed streams each having a format in accordance with a second  
5 predetermined protocol, and wherein a first one of said plurality of demultiplexers is  
6 operable for receiving said data stream from a first source, and a second one of said plurality  
7 operable for receiving said data stream from a second source;

8 first interface circuitry operable for receiving information signals from a plurality of  
9 sources and outputting said first and second data streams from said first source and said  
10 second source;

11 conditional access logic operable for receiving one or more controlled access data  
12 streams in said set of demultiplexed streams, said conditional access logic outputting one or  
13 more descrambled data streams in response to corresponding ones of said controlled access  
14 data streams;

15 a multiplexer coupled to said plurality of demultiplexers, said multiplexer operable  
16 for receiving one or more demultiplexed stream from each set of demultiplexed streams and  
17 said one or more descrambled data streams and outputs a multiplexed data stream having a  
18 format in accordance with a third predetermined protocol; and

19 a network encoder operable for receiving said multiplexed data stream and outputting  
20 an output data stream encapsulated in accordance with a predetermined data-link-layer  
21 protocol.

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1 12. The system of claim 11 wherein said first and second predetermined protocols are  
2 the same.

1 13. The system of claim 11 wherein said first protocol corresponds to an MPEG-2  
2 specification.

1 14. The system of claim 11 further comprising a first switch coupled to said plurality of  
2 multiplexers, and said conditional access logic, said first switch operable for switching a  
3 selected one of said one or more controlled access streams between a corresponding one of  
4 said plurality of demultiplexers and said controlled access logic.

1 15. The system of claim 11 further comprising a central processing unit (CPU) coupled  
2 to said plurality of demultiplexers and said multiplexer, said CPU receiving a set of control  
3 data from said plurality of demultiplexers and outputting a first control signal, operable for  
4 addressing said multiplexed data stream in accordance with said predetermined link layer  
5 protocol, to said multiplexer, said first control signal being output in response to said set of  
6 control data.

1 16. The system of claim 11 wherein said predetermined link-layer protocol comprises a  
2 link-layer protocol in accordance with a FireWire™ bus specification.

1 17. The system of claim 11 wherein said predetermined link-layer protocol comprises a  
2 link-layer protocol in accordance with a Fast Ethernet bus specification.

1 18. The system of claim 15 further comprising an interface unit coupling said CPU is  
2 coupled and said plurality of multiplexers, said interface unit being operable for  
3 communicating said control information between said CPU and said plurality of  
4 multiplexers.

1 19. The system of claim 18 wherein said interface unit is operable for receiving a data  
2 stream from a third source, said data stream from said third source having a format in  
3 accordance with a fourth predetermined protocol, said interface unit outputting said data  
4 stream from said third source to a selected one of said plurality of multiplexers in response  
5 to a second control signal from said CPU.

1 20. The system of claim 11 further comprising a controlled access input/output (I/O)  
2 device operable for receiving a controlled access user token; said controlled access I/O  
3 device operable for receiving access control information from said controlled access logic  
4 and outputting authentication information to said controlled access logic in response to  
5 thereto.

1 21. A media server method comprising the steps of:  
2 receiving a plurality of media streams, one or more of said media streams comprises  
3 multiplexed data;  
4 demultiplexing said one or more of said media streams comprising multiplexed data  
5 to form a plurality of elementary streams;  
6 descrambling a first one of said plurality of elementary streams in response to  
7 controlled access information in said first one of said plurality of elementary streams, to form  
8 a descrambled stream; and  
9 multiplexing said descrambled stream and remaining ones of said elementary stream  
10 to form a transport stream.

1 22. The method of claim 21 further comprising the step of sending said transport stream  
2 to one or more networked user presentation devices.

1 23. The method of claim 21 wherein a first one of said media streams is encoded in  
2 accordance with a first predetermined protocol and a second one of said plurality of media  
3 streams is encoded in accordance with a second predetermined protocol.

1 24. The method of claim 23 further comprising the step of multiplexing said second one  
2 of said plurality of media streams in said transport stream.

1        25.    The method of claim 24 wherein said second one of said plurality of media streams  
2        is multiplexed in said transport stream by encapsulating said second predetermined protocol  
3        in accordance with said first predetermined protocol.

1        26.    The method of claim 21 further comprising the step of encoding said transport stream  
2        in accordance with a predetermined link-layer protocol.